

U.S.S.N. 09/760,046

Filed: January 12, 2001

**AMENDMENT AND RESPONSE TO OFFICE ACTION****Remarks**

Claims 1, 3, 4, 6-13, 15-26, and 34 are pending. Claim 16 has been amended to correct a grammatical error. Claim 27 was renumbered as Claim 34 to correct a clerical error in numbering the claims.

The claims define methods for making micronized particles of agent (*i.e.* particles with a size smaller than about 10  $\mu\text{m}$  (see page 1, lines 12-14)). The method produces particles of agent with a homogenous size distribution, and well-defined properties (see page 5, lines 16-19 and page 17, lines 10-14). Dependent claims 3, 16-22, 25, and 26 define the optional step of encapsulating the micronized particles of agent.

**Rejection Under 35 U.S.C. § 102**

Claims 1, 3, 7-9, 11-13, 15-17, 19, and 23-26 were rejected under 35 U.S.C. § 102(b) as being anticipated by WO 98/46212 to Shah ("Shah"). Applicants respectfully traverse this rejection to the extent that it is applied to the claims as amended.

Shah discloses an **encapsulation process** for forming sustained-release microcapsules with a protein core. Shah requires the steps of (1) dissolving a polymer in an organic solvent to form a polymeric solution, (2) adding an active agent to the polymeric solution to form a first emulsion or suspension, (3) dispersing the first emulsion or suspension in a continuous phase to form a dispersion, (4) adding an excipient to the dispersion, (5) freezing the dispersion, and (6) lyophilizing the frozen dispersion to remove solvents and produce microparticles containing protein. Thus, Shah forms a **double emulsion** (w/o/w, w/o/o, s/o/w, or s/o/o) prior to freezing

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and lyophilization (*see* Figure 1). Shah does not disclose the size of protein particles. Shah does not separate the polymer from the protein. In contrast in the pending application, in the final step of the sole independent claim, the micronized particles of agent are separated from the macromolecular matrix, producing particles of agent that are not encapsulated. Therefore claims 1, 3, 7-9, 11-13, 15-17, 19, and 23-26 are novel in view of Shah.

**Rejection Under 35 U.S.C. § 103**

Claims 1, 3, 4, 6-13, 15-26, and 34 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Shah. Applicants respectfully traverse this rejection to the extent that it is applied to the claims as amended.

The pending claims are directed at micronizing particles of agent. The particles of agent are separated from the macromolecular matrix (see claim 1). Optionally, the micronized particles are subsequently encapsulated after the micronization procedure. A variety of different know encapsulation techniques can be used, such as interfacial polycondensation, spray drying, hot melt microencapsulation, and phase separation techniques (*e.g.* solvent extraction, solvent evaporation, and phase inversion) (claims 16 and 17).

As discussed above, Shah is directed at **encapsulating** proteins. Shah's method requires at least one extra step over the claimed methods; this step is the formation of a double emulsion. There is no teaching or suggestion in Shah to modify its process to exclude the formation of a double emulsion. In fact Shah teaches that the formation of the second emulsion is **essential** to its encapsulation process (page 15, lines 4-8).

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Additionally, Shah does not teach the last required step, *i.e.* the separation of the macromolecular matrix from the active agent. Shah teaches away from separating the protein from the polymer since it is directed at encapsulating the protein in the polymer. Thus there is no teaching or suggestion in Shah to modify its process to include a separation step. Therefore, Shah would not make claims 1, 3, 4, 6-13, 15-26, and 34 obvious to one of ordinary skill in the art.

Allowance of claims 1, 3, 4, 6-13, 15-26, and 34, as amended, is respectfully solicited.

Respectfully submitted,

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**Certificate of Facsimile Transmission**

I hereby certify that this Amendment and Response to Office Action, and any documents referred to as attached therein are being facsimile transmitted on this date, September 11, 2003, to the Commissioner for Patents, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450.

  
Pam Turnbough

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